**From:** Turner, Philip
**To:** Coltrain, Katrina
**Subject:** RE: Wilcox questions
**Date:** Thursday, July 23, 2015 8:39:29 PM

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Hi Katrina,

My thoughts are below… in green. Let me know if you have any additional questions.

Phil

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**From:** Coltrain, Katrina
**Sent:** Wednesday, July 22, 2015 7:52 PM
**To:** Turner, Philip
**Subject:** Wilcox questions

Hey Phil, I received a whole lot of questions from the contractor regarding the Wilcox investigation. Some of them I want you to see before I respond. Please see the questions below. I know this is short turn-around, but I would like to get these to the CO on Friday, so if you could get response to me by noon Friday, I sure would appreciate it.

thanks

3) Page 7, Task 1.2.1.1, RI/FS Field Sampling Plan, 3rd paragraph: "…The contractor shall provide a strategy that includes both biased (judgmental) and random sampling, including sampling of background for each environmental media. ."
**EA Questions**:

a. For surface water and sediment, will 10 samples per medium be sufficient to estimate background concentrations?

Can we answer yes to this? **YES**

b. For soil, to assure comparability of results, will 10 samples be sufficient for each of the four depth intervals defined in the SOW (0-6 in, 6-12 in, 12-24 in, and 5 ft)? Also, please confirm that the method for environmental sample collection will be the same as the method for background sample collection (for example, incremental sampling methodology will be used for both).

Do we need 'background' for each interval? Do they need to be incremental? **Background for the first interval only is fine. They do not need to be incremental.**

c. For ground water, will a limited number of upgradient wells be used to establish background concentrations and perform a water quality assessment? If so, how many upgradient wells should be estimated?

Thoughts? **This is a tricky one. We should definitely establish groundwater background, but number of wells depends on the nature of the groundwater. We would**

**want to have at least one background well for each area of groundwater flowing from a different direction and/or from different aquifer(s). We also need to make sure the area we choose for background is, in fact, not impacted by the site (sometimes groundwater can flow in opposite directions than anticipated. From a risk perspective each well stands on its own. Having said that, I would suggest a minimum of 3 wells, spanning the entire site… with the understanding that this may have to change once we learn more about the site hydrology.**

a. Should hexavalent chromium analysis also be considered (hexavalent chromium may have been used in cooling towers)?

This is for groundwater. Should we include it? **Yes, Absolutely.**

a. Please specify the analytical suites for the ground water samples. EA anticipates that at a minimum, the following tests will be performed for all ground water samples: volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals. In addition, 10% of the samples will be analyzed for PCBs and pesticides. What metals should be included in the suite?

TAL metals—are other sites doing anything different? **Not that I know of. This sounds fine. Does PAHs include other semi-volatiles in this case? Why does the 10% not include dioxin/furans?**

20) Page 14, Task 3.10, Ecological Characterization, : "The contractor shall perform an ecological characterization of the Site necessary for the implementation of this RI/FS. For estimation purposes, it is expected that tissue sampling will be done at the site using fish and plants. It is expected that 10 samples per organism will be needed."
EA Question: How many organisms (fish and plants) should EA assume for costing purposes, as well as the analytical suite to be assumed for each organism?
Thoughts? How might I have explained this? Is there a typical general request: say 3 composites of 2 fish species? **There is not really anything typical. Tissue sampling is usually quite site-specific. I would avoid composites unless sampling efforts are not productive (i.e., can't find enough critters). 5-10 individual samples from each waterbody is a reasonable goal. For fish, we would also want some analyses that are whole body, and some that are fillet only. This differentiates human health from eco. Finally, if we can, we should include some invertebrates (mussels, crawfish)**

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